

**ABSTRACT OF THE DISCLOSURE**

The encoding system includes a feed unit receiving data and producing N data streams, where N is at least two. Each of N encoders receives a respective one of the N data streams and produces an encoded data stream. A multiple input multiple output (MIMO) encoder receives the N encoded data streams and encodes the N encoded data streams into M output data stream for transmission by M transmit antennas, where M is at least two. In the decoding system, a MIMO decoder receives T data streams from T receive antennas and decodes the T data streams into the N encoded data streams. Each of N decoders receives a respective one of the N encoded data streams from the MIMO decoder and produces N decoded data streams. A combiner combines the N decoded data streams into an output data stream.